Defensive Armor Deployments in Urban Areas

by Nader Elhefnawy

A survey of the literature on armored warfare shows that relatively little consideration is given to the defensive use of armor in urban areas, for a number of reasons. However, two main factors are the aversion of conventional militaries to urban warfare generally, and that infantry tends to be the principal player in urban areas with armor deployed in support, which consequently caused the development of doctrine for armored units to lag behind that of other arms.[1] This is beginning to change after realizing, over the past several years, that American units will not be able to avoid fighting in cities, and that armor will play a crucial role in such warfare.

However, those occasions on which armored forces have fought in urban areas in recent years have seen armor used in an offensive capacity, as with the Russian forces in Grozny. Similarly, most scenarios in which the United States is likely to deploy armor in urban combat, namely the burgeoning cities of the Third World, see U.S. forces taking the offensive, which is why American tankers train that way. Additionally, the emphasis is on low-intensity conflict and peacekeeping, so the assumption is that those opponents the United States will face in urban areas will be lightly armed, with little, if any, armor. While this was true in Panama and Somalia, it will not always be the case. Therefore, the likelihood that some potential U.S. adversaries will deploy sizable tank forces inside urban areas should be considered, which makes how these forces may be used, and the challenge U.S. forces could face, well worth a closer look.

Armored Forces and Urban Areas: A Convergence

The increasing importance of urban warfare in a world where armor is so widely proliferated suggests that the United States should plan to face tanks, and even tank-heavy forces in urban warfare. While the heaviest weapon that the Panamanian Defense Forces fielded was an armored car, over 110,000 main battle tanks are in service worldwide, even after the massive Cold War cutbacks that drastically reduced the number of tanks in Europe. It may be that over half of these belong to NATO, the Russian Federation, or China; there are, for instance, 30,000 tanks in the Middle East and South Asia.

Even in regions where battle tanks number in the low thousands, such as sub-Saharan Africa and Latin America, lighter armored vehicles, including light tanks, infantry fighting vehicles, and scout cars mounting antiarmor missiles and heavy guns, are quite widespread. Counting in such light armor, or self-propelled artillery, which can be used in close combat as a direct-fire weapon, the number would be higher still, more than 300,000 vehicles worldwide. States aside, nonstate actors, like warlords, are often able to amass sizable armored forces, particularly when a major state breaks up, as happened in the former

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Soviet Union and Yugoslavia, and could conceivably happen elsewhere. The number is thought likely to decline in the near future as older tanks are shed, and the high cost of modern replacements encourages the purchase of fewer, though more capable, vehicles. Despite that, a high estimate claims that nearly 100,000 tanks will still be in service in 2015. However, even one-half of the number of tanks in the Third World regions where American military interventions are likeliest will still mean tens of thousands of armored vehicles in service.

At the same time, cities are increasingly important as centers of gravity, making urban warfare more likely. In Carl von Clausewitz's day, the significance of capital cities was that they contained a government's administrative apparatus. Today, they are also the principal concentrations of human and materiel resources, and the urban sprawl resulting from industrialization and urbanization means they simply cover that much more of the landscape. Between 1950 and 2000, the percentage of the world's population living in cities rose from 29 percent to 50 percent, even as the total population more than doubled within that time frame, and those cities now comprise one percent of the planet's surface.

The likelihood of scenarios that armored forces may have to face in these sprawling urban areas grows even more apparent when the details are examined. The vast majority of the world's tank forces are, after all, compared unfavorably with first-line Western, Israeli, or other such armored forces, and are likely to remain so, given the high cost of replacing older tanks or their lack of comparable resources for training.[2] Though this is not to say that all armored forces that the United States may face in the future will be as outmatched as Iraq's was in 1991, they will likely be inadequate against a high-tech military like that fielded by the United States, even if suitable for dealing with internal enemies or neighbors. The owners of these tank forces may consequently opt to engage in urban warfare, and to deploy their armor accordingly, a problem that is no longer theoretical. In the Kosovo conflict, the possibility that U.S. forces would have to fight in Yugoslav cities, and against Yugoslav heavy forces was raised, though quickly forgotten when airpower appeared to have been enough. Today, the possibility that the United States will engage in urban warfare in Iraq, which also possesses a substantial tank park, makes the issue timely again. Even if war is avoided, or airpower proves to be enough, the possibility of such a conflict elsewhere in the near future remains.

Dispersing armored forces in urban areas in such a scenario poses a number of challenges for U.S. forces, particularly the airpower that appeared to many observers to be a panacea following U.S. successes in the Gulf and the Balkans during the 1990s.

While assuming the capability of airpower that can go virtually anywhere and destroy anything that can be seen with precision-guided munitions, scholar Daryl Press argues, static, defensively situated forces are relatively immune to air attack for a number of reasons.[3] One reason is they place lower demands on logistics, and communications and control systems. Because they consume fewer supplies, they suffer less from a communications loss, particularly if they had the opportunity to accumulate supplies in theater beforehand. Another reason is they produce less heat, noise, and radio traffic, which makes it more difficult to reliably identify them for targeting and damage assessment after the fact, or for that matter, for attack aircraft to distinguish between real targets and decoys from medium level.[4] Such problems are far more pronounced in urban areas than in the desert, given that these are "dirty" environments with a number of nonmilitary devices generating thermal, magnetic, and electromagnetic signatures.[5] Consequently, softening up armored forces with air strikes aside, the difficulty that cities pose for gathering good technical intelligence will undermine the effective conduct of urban operations in general.

In the Killing Zone

Engaging a defensively deployed armored force in an urban area presents challenges quite different from taking them on in the desert. The sheer size of modern cities and the reduced troop strength of all militaries make encirclement more difficult, suggesting greater opportunities for defending forces to escape to fallback points, or to conduct counterattacks (though dismounted infantry may be better able to exploit such openings than armor). More importantly, while the defensive may be the stronger form of combat in most environments, this is especially the case in terrain where mobility is severely restricted. With mobility — armor's crucial characteristic — reduced, its outstanding attributes become those of protection and firepower; characteristics that tend to favor the defensive at the expense of the offensive.

The fragmented nature of inner cities may also erode key advantages that U.S. armor had in the Gulf during 1991, such as the longer reach of U.S. tank guns. In the open desert, U.S. M1s regularly scored first-round kills at Iraqi tanks four kilometers away, long before Iraqis could fire their first shot. In the broken terrain of an urban environment, engagements are likely to occur at much shorter ranges. While the direct-fire capability of defending tanks is diminished, a force of T-55s or T-72s facing a force of M1s or Challengers has less to lose, the shorter-range engagements allow older, lower quality tanks and less well-trained crews to get the most out of their systems before more advanced systems can kill them. Channeled by the streets, with little room to maneuver, U.S. armor would be less able to mass its superior firepower or outmaneuver an opponent, which, in turn, makes the inadequacies of a defender's command, control, communications, and intelligence less problematic. Where mobility is concerned, old-

Photo by Robert L. Stevenson

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er Russian-style tanks, like the T-72, may benefit from their smaller size and lower silhouette that makes them easier to conceal and better enables them to negotiate narrow city streets; the same applies to light armor.

That said, a word on the tactics that defensively employed armor may use is in order. One of the principal missions of armor in urban settings is protecting barricades and other obstacles, which will likely force short-range engagements as U.S. armor approaches to destroy it with gunfire. In providing overwatch for such barricades, the complexity of urban environments would offer virtually innumerable opportunities for the creative integration of tank guns with other fires, and also make "knowing the terrain" much more important than in the case with featureless desert or plain.

Aside from reducing the range at which engagements occur (giving a less potent tank gun like that mounted on the T-72 a better chance of inflicting damage), such strongpoints will give the defending armor the benefit of cover and concealment, making the tanks defending them harder to target. Being behind a barricade able to absorb some of an attacker's fire, they will also be more survivable. U.S. Army Field Manual 90-10, *Military Operations on Urbanized Terrain*, calls for such strong points to be mutually supporting with concealed routes of movement between them, and dispersed in depth, so that points of the perimeter coming under attack can be shored up, and armor has room to fall back.[6] Penetrating a city center is likely to involve fighting through a series of such barricades.

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Hit-and-run attacks are also conceivable. While the size of modern tanks and the impediment to their mobility caused by broken urban terrain make this difficult, the methodical approach necessarily followed in taking a city may give them the chance to escape. While U.S. armor can keep up with any conceivable opponent's armored or mechanized units, they will not readily give chase, given the risk of being led into a kill sack. Moreover, such attacks can be conducted by lighter armor, or for that matter, cars, jeeps, or light trucks carrying armed passengers, some of which may also mount heavy machine guns, recoilless rifles, and missile launchers. Forces so equipped performed spectacularly in Chad, and while a modern inner city is not the desert, and U.S. forces will *not* perform like the Libyan mechanized units of the 1980s, this opens another avenue for enemy action. Again, while mobility within cities is generally hampered, relatively ubiquitous cars will have a higher relative mobility in city streets than 40-, 50-, and 70-ton tanks, and while they are unlikely to destroy a battle tank, they can supplement the armored forces by acting as scouts, and harry advancing U.S. forces. Cars used by military or paramilitary forces as infantry fighting vehicles and light trucks being used as assault guns are unlikely to be neutralized from the air, and relatively numerous, defending forces perhaps commandeering suitable civilian vehicles for the purpose. Tank commanders will have greater incentive to button up their vehicles, dismounted infantry and light armor will be vulnerable to their weapons and the cumulative effect of multiple hit-and-run attacks will be to further slow the advance.

The vulnerability of infantry without armor has been demonstrated time and again, and the vulnerability of infantry *to* armor is no less of a problem for U.S. forces. A defending force is likely to seek out situations in which it can use its armored forces against unprotected infantry. So-called "surgical" urban strikes, as the October 1993 firefight in Mogadishu demonstrated, can go badly — light forces getting cor-

nered on the ground; how much worse would the battle have gone if the Somalis had a couple of T-72s with them? The nonlinearity of urban environments makes situational awareness elusive, and suggests that infantry may get cut off from their armor support during the course of operations. Separating attacking infantry from their supporting armor would also be a logical approach. Armored units could rely on antitank teams to take out advancing armor, and then turn their firepower on the unprotected infantry. The Chechens in Grozny routinely did this by using snipers to pin down infantry long enough to attack their escort tank with multiple rocket-propelled grenades or Molotov cocktails. Had they then used tanks (perhaps kept in hiding places near the scene of the ambush) on the forces left exposed, the war may have gone even more poorly for the Russians.

Tank confrontations described here do not have the makings of a decisive battle, but they would provide a defending armored force with opportunities to inflict casualties or damage that they would not have in other environments, perhaps the only way that they may get use from an ill-trained, obsolete tank force that the United States is most likely to face. It would instead be a question of attrition, opposing forces attempting to maximize U.S. losses, targeting above all else, America's sensitivity to casualties. Such a strategy may also compel some unconventional approaches on the part of defending forces. For instance, instead of antiarmor units permitting scout vehicles to pass and wait for heavier armor before attacking and giving away their positions, they may turn their firepower on the more lightly protected and less well-armed scouts. Well-hidden tanks may wait for armor to pass, and target the dismounted infantry or supporting vehicles coming from behind.

The deployment of tanks in urban areas as described here means that U.S. armor may frequently be taken by surprise, and unable to get the first shot, so we will have to withstand more and closer-ranged attacks than in open terrain. However, U.S. tanks appear relatively impervious to most of the tank guns they are likely to encounter; only a small percentage of the hits scored by T-72s in the Gulf resulted in damage, and none of those hits destroyed a U.S. tank. Particularly where barricades are concerned, aerial reconnaissance conducted by low-flying helicopters may go a long way to avoid nasty surprises. Rooting out ambushes by hidden vehicles will be a question of doing the best possible job with reconnaissance, analyzing the terrain intensively beforehand with an eye to potential danger areas, and a special emphasis on human intelligence gathering to identify the threats in advance. The risk that infantry may get isolated and savaged by defending armor calls attention to the need for close integration between armor and dismounted infantry, and also for armored forces to extricate trapped pockets of infantry, as should have happened in Mogadishu.

None of this bespeaks a major change in the theory and practice of urban warfare as it is presently understood, but it does suggest that armored warfare in cities will be somewhat less one-sided than it was in the southern Iraqi desert during 1991. Over the longer term, however, the problem will drive innovation in the development of armored forces. M1s may be upgraded, with everything from sensors and displays to give a buttoned-up tank commander a three-hundred-and-sixty-degree view of the terrain around him to active defense systems able to knock an incoming rocket off its flight path. Net-centric tanks, swapping the conception of a "land battleship" for a "land carrier battle group," for instance, may smooth the integration of infantry with armor in combined-arms operations by enabling them to plug into a common net. Future tanks, unitary or net-centric, may deploy their own aerial reconnaissance in the form of miniature drones launched from their component vehicles. Combined with weapons able to strike targets outside the line of sight, such as missiles that can maneuver around street corners, miniature drones may give greater meaning to the capacity of U.S. forces to survey even the most complex environments.

Given the recent experience of armored forces in urban areas, it is not surprising that the defensive employment of armor in urban areas has been given little consideration, but the likelihood of urban conflict, and the number of tanks in service worldwide, suggest that some rethinking is in order. Engaging an adversarial armored force in urban warfare is likely to diminish certain U.S. technological advantages, particularly those in reconnaissance, command and control, and the capability to destroy targets at long range.

Nonetheless, those advantages are ultimately so great that this erosion is unlikely to change the outcome of a major battle, which potential opponents are likely to appreciate. Instead, they may see using a large, but outmatched armored force to slow down an incursion into an urban area and maximize U.S. losses as a better option than leaving it to be gradually ground down from the air or swiftly annihilated on the ground by more modern air and land forces. The prospect of such conflict is also unlikely to change the fundamentals of urban operations in the near-term, but rather reaffirm them and continue to drive innovative thought on better adapting armor to urban situations. In the meantime, widening recognition of, and increasing thought about, the potential for not merely armored operations, but tank-on-tank combat in built-up areas is a modest but necessary step.

Notes

[1]Captain J.P. Klug, "Armor's Role in Future MOUT Doctrine," *ARMOR*, May-June 2000.

[2]R.M. Ogorkiewicz, "The Outlook for Tanks," *Jane's Land Forces*, 4 June 2002.

[3]Daryl G. Press, "The Myth of Air Power in the Gulf War and the Future of Warfare" *International Security*, Fall 2001.

[4]Aircraft can conduct attacks from lower level, but greatly risk themselves to antiaircraft guns and man-portable surface-to-air missiles. While more effective bombing may seem worth the risk, that risk runs against the idea of aerial warfare as a casualty-free affair, a principal justification put forth by air power proponents.

[5]Lt. Gen. J.E. Rhodes, "A Concept for Antiarmor Operations," *Marine Corps Gazette*, September 1998.

[6]U.S. Army Field Manual 90-10, *Military Operations on Urbanized Terrain*, Washington, D.C., U.S. Government Printing Office, 15 August 1979.

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